



# PLANT MATERIALS CRIER



## A Quarterly Newsletter of the Kika de la Garza Plant Materials Center

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*This is a quarterly field office newsletter to transfer plant materials technology, services, and needs. The plant materials personnel will be featuring short articles on project results, new cultivar releases and establishment techniques, seed collection, and field planting needs, etc. All offices are encouraged to submit articles about plant material-related activities relative to plant performance, adaptation, cultural and management techniques, etc. Direct inquiries to USDA NRCS, Kika de la Garza Plant Materials Center, 3409 North FM 1355, Kingsville, TX 78363, Phone/Fax 361-595-1313; or Rob Ziehr, Plant Materials Specialist, USDA NRCS Texas Office, WR Pogue Federal Bldg., 101 South Main Street, Temple, TX 76501-7682, Phone 254-742-9888.*

### Cleaning Windmillgrass Seed

As we continue to move toward releasing both hooded windmillgrass (*Chloris cucullata*) and shortspike windmillgrass (*Chloris subdolicastachya*), and begin to deal with a larger bulk of harvest, we have started looking at more efficient methods of cleaning the seed. The seedheads of both species sit high enough to be harvested with a combine. Poor seed fill is inherent in the species, thus it is much more accurate (and a lot less bulk) to deal with bare caryopsis than the seed spikelets.



Brush Machine

At the PMC, we have two main methods to clean the harvest down to a bare seed. One method is to run the harvest through a brush machine, which has four brushes or paddles that scrape the seeds against a screen or solid diamond plate. This knocks hulls from the seedhead and also knocks seeds out of the hulls. This method can be adjusted by time in the machine, screen size, and

brushes or paddles used. Another method is to run the harvest through a hammermill. This machine has several bars that chop through the material until it is small enough to fall through a bottom screen. This action both chops up the chaff and knocks seeds out of the hulls. This is a more violent method and may damage the seed. With either method the resulting material is then run through a table top Clipper that uses screens and air flow to separate the bare seeds and seeds still in the hull from chaff and dust.

We ran a batch of a harvest of shortspike windmillgrass through both machines to determine their efficiency and if either damaged the seeds. The

first time the harvest was run through the brush machine, it mainly separated the hulls from the seedheads. The hulls were run through the machine two more times to knock out the seeds. Unfortunately even after three attempts, around half of the seeds were not knocked loose. The material could be left in the machine only about 5 minutes each time, as the material would start to heat up which can damage the seed.



We found that the hammermill did not separate the seed hulls from the seed heads very well. However, if the harvest was run through the brush machine once and then the hammermill once, almost all of the seeds were knocked out of the hulls.

A germination test was run to see the effects of the cleaning methods on the bare seeds. The seeds run through the brush machine 3 times had a germination rate of 74.0% and the seeds run through the brush machine once then the hammermill once had a rate of 71.5%. Since there was little difference in germination, but a large difference in the amount of bare seed removed from the hulls, we will run future harvests through the brush machine once and then the hammermill once to clean them down to bare seeds.



Hammermill

## Establishing Coastal Sand Dunes



In 2005, the PMC coordinated with The Nature Conservancy (TNC), the South Padre Island Parks Department (SPIPD), and the U.S. Fish and Wildlife Service to form 300 feet of encapsulated soil in order to construct and vegetate a 4 foot high by 40 foot wide sand dune.

However, Hurricane Emily in 2005 destroyed most of this dune. Therefore, the PMC is going to reconstruct 150 feet of this dune. The fortunate aspect of the destruction of this dune is that it gives us a chance to evaluate some new construction methods. We will be looking at the use of coconut fiber blocks and also at “concertainers,” metal cases filled with sand and covered with coconut fiber.



### Plant Profile: Indian Woodoats

Indian woodoats (*Chasmanthium latifolium*) is also known as inland seaoats. It is a rhizomatous perennial growing up to 1.5 meters tall. The inflorescence is a drooping panicle with flattened spikelets. There are approximately 115,520 seeds per pound of Indian woodoats.

Indian woodoats grow in all areas of Texas except the Panhandle and extreme western and southern Texas. woodlands and along shaded stream banks. In the United States, it occurs in Pennsylvania, Illinois, and Nebraska, southward to northwestern Florida and the

Gulf Coast to Texas, and in New Mexico. It can also be found in Manitoba and Nuevo Leon.

It is a good plant for shaded stream bank restoration projects as its rhizomatous perennial habit causes it to hold soil. Indian woodoats does not produce significant forage, but domestic livestock will graze it. However it decreases quickly under high grazing pressure.

It is also useful in shaded ornamental plantings. The flattened, pendulous spikelets of Indian woodoats make it an attractive grass for planting under large shade trees, where few other grass species grow. It also produces seed on which birds and rodents feed.

Indian woodoats is best reproduced from seed. A germination trial at the Kika de la Garza PMC found collections less than 5 years old to have an average germination rate of 75%. Two collections made in 1978 had germination rates of 40% & 60%. For transplants, we recommend seeding in 1"x1"x3" or 1"x1"x6" paper bands with 2 seeds per band. A field trial at the center had a 100% survival rate of transplants over two years. For direct seeding, plant at a rate of 8 lbs. per acre in a weed free, shaded seed bed.

Indian woodoats requires little management. We have had no apparent insect problems. However plants exposed to too much direct light become yellowed and less dense.



Indian Woodoats



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